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THE ZOOLOGIST:

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OF

NATURAL HISTORY,

AND

JOURNAL FOR RECORDING FACTS AND ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, MOLLUSKS,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

No. CCXC.

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EDWARD NEWMAN, 9, Devonshire Street, Bishopsgate, London, N.E.

NOTICES OF NEW BOOKS.

'*Handbook to the Birds of Australia.*' By JOHN GOULD, F.R.S., &c. In Two Volumes, royal 8vo. Published by the Author, at No. 26, Charlotte Street, Bloomsbury. 1865.

THE author and reviewer are both under a disadvantage in the notice of an incomplete work. The author may fairly object to any criticisms that would apply to the work as a whole; and the reviewer is especially liable to the fallacy of praising or blaming certain peculiarities which would perhaps escape notice when the work was complete. It is desirable, therefore, to state that this is but the first volume of a work that proposes to describe all the birds of Australia, and is intended to be a reprint of Mr. Gould's great work on the Birds of Australia, incorporating all the discoveries which have been made since the completion of that magnificent work, in 1845. The present volume contains 636 pages of letter-press, without illustrations, and describes all the birds of prey, thirty-seven in number; and three hundred and fifty-one of the passerine tribes, which are here, after the English fashion, termed Insessores.

It is almost superfluous to remark that, of all living ornithologists, Mr. Gould is the most competent to accomplish thoroughly this self-imposed task: not only is he familiar with the book and museum phase of his subject,—and to this he has contributed more than any other man,—but he has dwelt among these birds in their Australian homes, has heard their voices, watched their flight, taken their nests, noted their migrations, sketched their living forms, and made himself in every respect at home with their life-histories; so that, possessing in himself the largest amount of Australian bird-lore that was ever amassed, he is without question the best man to complete a Natural History of our Antipodean Birds.

There are certain circumstances which render Australia a country of the highest possible zoological interest. Admitting, as we generally do, that the placental animals are the highest in Nature's scale, it is not a little remarkable that from Australia they are almost entirely absent; there are no beasts of prey, no ruminants, no pachyderms; rodents are represented by a few species of rats, and these, with a few bats, constitute the entire placental fauna: but marsupials, that strangely primitive form of sucklers, abound, although fast fading away, and destined shortly to yield their places to the milch kine and sheep of Britain,—yet too unmistakably registered by Science ever to be forgotten while the printing-

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press remains to us, with its miraculous power of reproducing the effigies and characters of those beings which have once been faithfully portrayed.

But let us hear Mr. Gould, on the birds.

"Although Australia is destitute of many of the great groups of birds inhabiting India and its islands, she possesses many other equally singular forms especially adapted to find their existence among her very remarkable flora, and her equally remarkable insects. Of these her sixty species of parrots, scarcely one of which is found beyond her limits, are unrivalled for size and beauty of plumage; conspicuous also are the extensive group of honey-eaters forming the family Meliphagidæ, the elegant Maluri, the forest-loving bower-birds, and the graceful Menuras: all these, combined, furnish abundant illustration of the remark with which I commenced. The absence of such birds as hornbills from Australia is evidently due to the circumstance of her flora not comprising any of the numerous large fruit-bearing trees which occur in India and Africa, and which are so essential to the existence of these birds; in like manner she is destitute of woodpeckers, because the bark of her trees is not adapted for the shelter of the insects upon which they love to feed; neither do her few berry-bearing shrubs offer attractions to the Eurylaimi or the omnivorous barbets and Trigons. No true wagtail trips over her hard-baked soil in pursuit of Aphides and other minute insects, as in Britain; no Saxicola enlivens with its sprightly actions her sterile wastes; and feebly indeed, among her birds, are represented the melodious notes which are freely poured forth by many of the species inhabiting countries north of the equator, and which render the spring such a joyous period in England. No mavis has she to usher in the morning, and terminate the summer day, with its vigorous note; no Philomel to break the stillness of night with its joyous song: quietude, as regards the voice of birds, reigns supreme; or if there be any exception to this rule, it is the noisy screams of her parrots, the monotonous though liquid notes of some of her honey-eaters, the loud call of the Menura, or the warbling of the reed-birds.

"Some parts of the avifauna of Australia are, however, very similar to that of other countries; eagles, hawks, harriers and owls play their accustomed parts; while swifts, swallows, martins, and flycatchers perform the same offices as with us; the nocturnal group of Caprimulgidæ are not wanting where Phasmidæ and Cicadæ abound; petrels, gulls, terns, and penguins frequent her seas; her rock-bound shores have their cormorants; the sandy spits of her rivers their pelicans, sandpipers, and plovers; and her swamps and morasses are tenanted by ducks, grebes, gallinules, and rails of the same types as those inhabiting her antipodes. But these, in nearly every case, are distinct species: she possesses no true Anser; but every one knows that she has that '*rara avis in terris*,' the black swan. It is, however, in the interior of the country (adorned with the universally spread Eucalypti, extensive belts of Banksiæ, forests of Xanthorrhœæ, Melalucæ, &c.), and in the heated brushes which clothe its south-eastern portions (where stately palms spread their leaves over the eccaleobion or hatching mound of the Talegalla and the theatreion or playing bower of the Ptilonorhynchus), that we find an avifauna different from that of all other countries.

"Some few genera, such as Graucalus, Artamus, and Halcyon, are represented in the Indian Islands, on the peninsula of India, and even in some portions of the continent of Asia; and many more genera, and in some instances the same species, extend to New Guinea. The productions of this latter country are, in fact, so similar to those of Australia, that, zoologically speaking, they cannot be separated. In writing thus I, of course, include the southern country of Tasmania, but not New Zealand or its satellites, Lord Howe's, Norfolk, and Phillip Islands, and other adjacent specks in the ocean, the culminating points probably of some great sunken continent, where bird-life reigned supreme; for we have no evidence that any mammals, either placental or marsupial, except bats, ever roamed over its surface,—mighty birds taking the place of Mammalia, as is evidenced by the remains of the great Struthiones which are almost daily exhumed from the morasses, alluvial beds and caves of New Zealand.

"Australia, lying as it does between the 10th and 45th degrees of south latitude, is subject to many varieties of climate. The northern portions are visited by monsoons; while the southern have seasons similar to those which occur in countries lying under the same degree of latitude north of the line; in a word, summer and winter are as in England, but of course at reversed periods of the year; as a natural consequence, when the sun retires for a period from any portion of the land, vegetation sleeps and insect-life becomes inert. Bird-life follows the law of Nature, as seen in the northern hemisphere, and is much more rife at one season than at another. The swallow and its congeners come and go as regularly in the southern portion of Australia as they do in England; and so do the cuckoos, of which there are several species, and not only a single one as with us. Besides these, there are many other birds that are thus influenced; but the extent of their journeying has not been clearly ascertained further than that they generally proceed north when the sun retires, and return when he approaches: that they do not cross the equator is certain, for we should then find these peculiar species northward of the line, which we never do. There are also some non-migratory species which appear to perform a kind of exodus, and entirely forsake the part of the country in which they have been accustomed to dwell, and to betake themselves to some distant region, where they remain for five or ten years, and even for a longer period, and whence they as suddenly disappear as they had arrived. Some remarkable instances of this kind came under my own observation; for instance, the beautiful little warbling grass parakeet (*Melopsittacus undulatus*), which prior to 1838 was so rare in the southern parts of Australia that only a single example had been sent to Europe, arrived in that year in such countless multitudes on the Liverpool Plains that I could have procured any number of specimens, and more than once their delicate bodies formed an excellent article of food for myself and party. The Calopsitta Novæ Hollandiæ forms another case in point, and the beautiful harlequin bronze-winged pigeon a third: this latter bird occurred in such numbers on the plains near the Namoi in 1839, that eight fell to a single discharge of my gun: both the settlers and natives assured me they had suddenly arrived, and had never before been observed in that part of the country. The aborigines who were with me, and of whom I must speak in the highest praise, from the readiness with which they rendered me their assistance, affirmed, upon learning the nature of my pursuits, that they had come to meet me! The Tribonyx ventralis may be cited as another species whose movements are influenced in the same way. This bird visited the colony of Swan River in 1833, and that of South Australia in 1840, in such countless myriads, that whole fields of corn were trodden down and destroyed in a single night; and even the streets and gardens of Adelaide were, according to Captain Sturt, alive with them. Similarly to what occurs in America and on other great masses of land, we find in Australia the law of representation markedly carried out, as it mostly is where the same conditions exist. For instance, the beautiful frill-necked bower-bird of the scrubby plains of New South Wales is represented in north-western Australia by a nearly allied species, which makes its elegant bower in similar situations. The Podargus humeralis, which inhabits the Angophora-flats of New South Wales, is, in like manner, represented by the P. trachypterus in Western Australia, which presents a similar character of country, and so it is with many other species, both of mammals and birds."—*Introduction*, p. 2, *et seq.*

This long extract seemed necessary to show how completely Mr. Gould has mastered his subject. I must reserve for a future occasion, when the work shall be complete, those further extracts which, relating to individual species, will be read with still more interest. Mr. Gould is one of those who do not rest content with a mere description of beak, feet and feathers; he goes into the life-history of each species, and gives every particular he can collect of the living bird: how many years I have been urging on the attention of my fellow-labourers to direct their studies in this particular direction, the readers of the 'Zoologist' know full well: how much of obloquy and what strange rebuffs it has brought me, they also know. It is one of the rewards of perseverance to see the best and ablest taking the path I have always pointed out as the right path, not, indeed, because I have done so, but because it is, in their own convictions, the only path that leads to a true knowledge of the science they desire to teach. Not a month now passes but we find some life-history of a bird or insect carefully worked out by those who, had they ventured on this course twenty years ago, would have met with the most determined opposition, and probably received solemn reproof from the chair of some learned society. Mr. Gould is now doing this life-history business on a much more extensive scale in a work I shall shortly have occasion to notice more at large, the 'Birds of Britain,' a work highly creditable to the country which produces it, and one to which I heartily wish the most complete and entire success. But I must not allow a mere digression in advocacy of a principle to withdraw my attention from the more immediate subject of this notice, 'The Handbook of the Birds of Australia,' a work which has long been wanting; a work for which I have been repeatedly asked, and one which, when complete, will supply a necessity in the literature of our Australian colonies that has been felt by every naturalist whose interest or inclination has attracted him to that antipodean Britain. On the 2nd of December the second volume is to be issued, and then the work will be complete. It is not only my duty but my pleasure most cordially to recommend it to the readers of the 'Zoologist.'

EDWARD NEWMAN.

Whinchat's Nests in Mowing Grass.—Last week I took two nests of the whinchat, which were mown over here in the centre of two grass meadows. We have no furze or common-land nearer than three-quarters of a mile. Is this not rather unusual?—*W. Jesse; Maisonette, Ingatestone, Essex, August* 3, 1865.

White Eggs of the Greenfinch.—In reference to your note (Zool. 9732) on "White Eggs of the Yellowhammer," will you think the following worth recording? Two seasons since, two of my children, tolerably zealous egg-hunters, brought me an egg of what I hardly know how to describe otherwise than as a "warm shade of white," something like that of an unblown white egg, such as the sand martin's or a thin-shelled dipper's, but the shade more buffy than orange. The description and site of the nest, in connection with such an egg, puzzled me exceedingly, and the end was that I went with them to see it. I saw the parent bird on the nest, and when, after a good look at her, she at last flew off, she still gave me opportunities of personal identification, if I had needed more. The bird was a common greenfinch, and the nest, of the ordinary type, in a thick thorn-hedge, contained three other eggs of the same character as that I had in my hand.—*J. C. Atkinson; Danby, Grosmont, York.*

Miss Van der Meersch's Educated Birds at the Polytechnic.—On the evening when I had the pleasure of seeing this charming young lady and her troupe, the *corps dramatique* consisted of Mademoiselle herself, a Java sparrow, a bramble-finch or brambling, a cardinal bird, and a coral-beak. These birds were in a small oblong cage with four separate divisions, each with a portcullis door, the full width of the division, opening towards the audience. On commencing the performance Mademoiselle placed in front of the cage a very long tray completely filled with large cards, some having printed on them the names of the months, others those of the days of the week, whilst a third set had numerals, a fourth single letters, and a fifth were the facsimiles of an ordinary set of playing-cards. These cards were placed in the tray upon their edges, and were packed so closely together that the upper edges formed a flat surface, on which the birds could walk. Opening the door of the cage containing the Java sparrow, Mlle. Van der Meersch addressed the bird in the most endearing terms, and requested him to come out and tell the number of days in the year, whereupon the bird ran over the edges of the cards and pulled out with his beak that one which had 365 printed on it. In the same manner the cards containing the name of the day of the week and the number of the day of the month were selected. The name of the month and any particular letter were drawn out at the suggestion of any of the audience. Mademoiselle then asked for a name, when that of Marie was suggested by one of the ladies present. She then sorted out the cards having the five letters M-a-r-i-e printed on them, and desired the audience to place them promiscuously along with the others in the long tray. The brambling was then called out and asked to select the letters. He hopped over the cards and pulled out two, when he hopped back into his cage frightened at a slight movement that took place among the audience. The Java sparrow then came out and selected two more, when he retired, and the brambling pulled out the remaining one necessary to complete the name of "Marie." After this a number of cards were chosen by the audience from an ordinary playing-pack held in the hands of Mdlle. Van der Meersch, when the birds selected the corresponding cards from the row in front of the cages. At this time one of the audience left to witness another performance in the building; this movement alarmed the birds, who, with the self-conceit of other public favourites, hopped back into their cages with offended dignity. In estimating rightly the intelligence of the birds, as evidenced by this performance, it is necessary to separate the actions of the different performers. Mdlle. Van der Meersch is a *spirituelle* little lady, who performed her part with the greatest *naïveté* and tact; but, after eliminating all that could possibly be done by forcing cards on the audience, or by indicating those which the birds are required to select, there is sufficient evidence not only of the high intelligence of the birds, but of the unwearied patience and assiduity of the directress in perfecting their education. That a bird should select from amongst several hundred cards, standing closely packed together on edge, any single one at the will of the directress, no matter how it may be indicated, is in itself a great proof of extraordinary docility, and of a degree of reasoning power greater than is usually attributed to any of the lower animals. The motive power used by Mdlle. Van der Meersch is obviously kindness, and the immediate inducement a series of rewards in the shape of hemp-seed administered to the Java sparrow and brambling, and millet-seed to the coral-beak. That gentleness and love are the influences employed in the training of these feathered bipeds was proved by a little accident that occurred during the performance. Frightened by some movement among the audience, the Java sparrow flew to a distant part of the table. Mademoiselle strewed a few seeds in front of its cage, but it was too alarmed to be allured; so, putting down her little directing wand, Mademoiselle took up the little performer in her hands, and restored him to the cage, first kissing him in such a manner as convinced the spectators that

> "Had the birds been her own children, she
> Could not have loved them more tenderly."

To those who are interested in animals I cannot recommend a more delightful mode of passing half an hour than in a visit to the very pleasing, clever and instructive performance of Mdlle. Van der Meersch and her truly "marvellous birds."—*W. B Tegetmeier.*

Note on the Hooded Crow.—Capt. Hadfield appears (Zool. 9719) to have misunderstood my note on the crows (Zool. 9572), which was perhaps ambiguously expressed: what I meant was that the hooded crow is almost unknown *here.* I am, of course, aware that it is not uncommon in the north; it also breeds near Glasgow, where it constantly pairs with the carrion crow (*Corvus corone*), of which it is perhaps a northern race ('Ibis,' 1865, p. 134). I have also received eggs from Ayrshire.—*Edward R. Alston; Stockbriggs, Lesmahagow, September* 4, 1865.

Supposed Occurrence of the Golden Oriole near Norwich.—I was out boating on St. Martin's River, Norwich, during one cold December day in 1862, when I espied, on one of the meadows, a man employed with his nets catching small birds, such as linnets, goldfinches, redpoles, &c. I rowed the boat ashore, and approaching him made the usual inquiry as to whether he had met with anything unusual lately; he replied that during the morning he had seen what he considered to be a very strange bird: he described it as being about the size of a thrush or blackbird, and of a yellow colour; it passed and repassed over his nets several times, usually alighting on the trees or bushes that bordered the river on one side and the road on the opposite, the meadow lying between. He had had very good opportunities of observing it, as it sometimes passed within a few yards of him in crossing the meadow: he, however, missed it about noon, and had not seen or heard of it since. His description of the bird somewhat answered to that of the golden oriole (*Oriolus galbula*). Is it at all probable that it might have been an individual of that species? Has it ever been known to visit this country in the winter? I suggested to my informant that it might probably have been a variety of either the thrush or blackbird; but, as he was pretty well acquainted with birds, he seemed perfectly satisfied it was not: it was a new species to him; he had never seen one like it before.—*T. E. Gunn; Norwich.*

Cuckoo swallowing Cord.—In dissecting an example of the cuckoo, a few days since, I was surprised to find in its gizzard, in addition to its usual food, a piece of knotted cord of medium size and about four inches in length. It was doubtless swallowed, in mistake, for a crushed and disfigured larva, to which it bore some resemblance.—*Id.; August* 14, 1865.

Cuckoo in Confinement.—In the 'Zoologist' for 1864 I recorded an instance of the cuckoo being kept in confinement throughout the winter by a person residing in this city (Zool. 9024). I have lately had an opportunity of seeing Mr. Dew, the person referred to, who informed me of its death; he himself had the misfortune to be confined to his bed through illness, and being unable to attend to the wants of his pet as usual, he left it to the care of others, who neglected it, so that it died at the commencement of October, 1864; it thus remained alive in his possession just eighteen months. Since the publication of my previous note, I have seen remarks from a correspondent to another journal, in which he expresses himself disposed to doubt the statement sometimes made of the cuckoo passing the winter with us: it appears he himself and several of his friends have made several unsuccessful attempts to rear this bird through the winter, which of course is no reason why another enterprising rearer should not succeed in attaining his object. The truth of the above and subsequent statement may be implicitly relied on; the facts can be vouched for by several respectable inhabitants of this city, who, like myself, had opportunities of observing this peculiar pet while in Mr. Dew's possession.—*Id.; September,* 1865.

Curious Malformation of a Young Pheasant and a Bantam.—During the month of June last a very curious specimen of a young pheasant was brought to me for preservation. Instead of its eyes being placed in their usual position, it was peculiarly disfigured by having a double one in the centre of its forehead, covering the place where the upper mandible of its bill should be fixed, of which it was minus. A day or two afterwards I saw another malformed curiosity: in this instance it being a young bantam, the upper mandible of the bill of which curved downwards to the left, the lower mandible projecting out straight: it had only one eye, which was situated near the base of the bill at the right side; it was also minus one wing. From the appearance of its head and body, which appeared partly double, it had doubtless been hatched from a double-yolked egg, which are not of uncommon occurrence in this neighbourhood.—*Id.*

Young of the Domestic Fowl hatched by the Partridge.—Your note (Zool. 9732) on "Eggs of Pheasant and Partridge in the same Nest" reminded me of two instances, which I recorded in my own memoranda as occurring here last year. As your editorial note remarks, cases of pheasants' eggs in partridges' nests are very common; and, I may add, others, in which the French partridge lays in the common partridge's nest, are not unusual; but last year, in a field separated only by the road and a very narrow slip of land from this house, a pair of partridges had a chicken, or, as named here, a "young hen-bird," in company with their own proper young, and when disturbed, as they were on two occasions in one day by my neighbour, the owner and occupier of the land in question, they were as careful and fussy over their big, awkward, helpless, chirping fosterling as over their own young; in reality, more so, for, hearing its cry, and supposing it must be one of his own chickens strayed from its mother, he spent some time in searching for it, and the foster-parents did not leave it till the last extremity. He left it with them, and of its after fate there was no information. This instance was mentioned in my presence to my senior churchwarden, who immediately referred to a case in which, on his own farm, and under his own observation, a hen partridge sat upon five common fowl's eggs laid in her nest, hatched them, and was afterwards repeatedly, with her mate, seen with three of the chickens by my informant himself; but these three seemed to be all the brood, as he never saw any young partridges in company.—*J. C. Atkinson; Danby, Grosmont, York.*

Young Snipes.—In this district, as also on the warrens in Norfolk, snipes breed commonly, not to say numerously. Last year, in June, two of my sons caught a young snipe as they were walking with me over the moors. It was fledged and about two-thirds grown, but the bill only about half the length it would ultimately obtain. Eggs from a different part of the moor were brought me the year before, and this year my boys spent some hours in looking for a nest, which, it was certain, was placed in a rushy meadow near the beck in our valley. The sportsmen on the moors around, it may be added, sometimes kill several couples of young snipes a-day in the earliest part of the grouse season, and a year in which none are then met with *very* rarely occurs. I do not find our northern gamekeepers so ornithologically ignorant as your correspondent (Zool. 9733) seems to do in the district he refers to. With us the "little blue hawk" is strictly limited to the merlin; the kestrel is the "stand-hawk" or "hover-hawk;" the hen harrier has her proper name, and so on; and my chief friend in the "keeper" line is a fair ornithologist, a very shrewd intelligent man, and a good farmer, as well as able in his own department.—*Id.*

[I rather agree with the Rev. M. A. Mathew, that gamekeepers know little or nothing of Ornithology. It is not very long since a nobleman sent me the head, legs and wings of a cuckoo to name; he called my attention to the peculiar conformation of the foot, two toes being directed one way and two the other, and added, "I employ four keepers, neither of whom saw anything of the kind before." I gave, as politely as I could, the name of the bird, and in return lost a subscriber, and was pronounced "an ignorant cockney." I quote this as an extreme case, but nearly similar cases are not uncommon. Who has not seen cuckoos and green woodpeckers nailed to the "keeper's tree" as "vermin."—*Edward Newman.*]

Snipe nesting at Liphook.—I have received two snipe's eggs from Liphook, where they breed regularly, as do also teal.—*W. Jesse; Maisonette, Ingatestone, Essex, August* 3, 1865.

Snipes and Wagtails.—Whilst out walking I put up a pair of snipes, on the borders of a large piece of water: I think this (September 17th) very early for them to occur with us. On the same day, whilst walking along the banks of the Thames, I saw vast numbers of wagtails, I should say young birds of the year; I think I could reasonably say I saw between three and four hundred.—*Charles E. Stubbs; Henley-on-Thames, October* 6, 1865.

Curlew Tringa: Change of Plumage.—This is an interesting period for watching the change of plumage from summer to winter. I saw some curlew Tringa yesterday (females), sent from Scilly, in a very interesting state: the whole of the breast and under parts partook of an equal mixture of white and red, whilst the back and upper plumage had the cinereous feathers cropping out amidst the dark feathers, indicative of the summer plumage. These specimens were evidently old birds, as the young of the year have the breast and belly white, strongly tinged with buff-yellow.—*Edward Hearle Rodd; Penzance.*

Surf Scoter at Scilly.—A bird of this species, in a very beautiful state of plumage, was captured, a few days since, by a boy at Scilly, in a disabled state, and it has been sent over to-day, in the flesh, for preservation by Mr. Vingoe, who brought it, very civilly, for my inspection immediately on its arrival. I had an opportunity, therefore, of examining it carefully before it was skinned, and before the brilliant hues of its curiously constructed bill had apparently in the least faded. The body was much emaciated, and how the poor bird got down to Scilly is a mystery: from the intense black of its plumage, its strongly developed tubercular enlargements on each side of the posterior part of the upper mandibles, the clearly definite division of white between these and the brilliant Seville-orange coloured anterior portion of the upper mandible, ending in a pearl-gray nail, I should think that it is a very adult bird; the legs are bright red, with the interdigital membranes black.—*Id.; September* 25, 1865.

Birds at Glenarm.—On the 19th of July a nest of the merlin was found by the keeper here, containing two young birds, and two eggs varying much in colour and size; the nest was found amongst the heath, on high ground well stocked with grouse: the young birds were tethered in, so that the old birds might be trapped at a convenient time. The parent birds fed them principally with larks and meadow pipits during that time, which was about a week, the feathers being principally plucked before they were fed. The old hen was trapped and taken without receiving any harm; the male could have been taken, but time would not permit. I placed them in confinement: the old bird is exceedingly tame; she took her food from my hand the first day she was captured. Unfortunately one of the young birds got drowned in a tub of water, where it had gone to take a bath: I observe the young are very fond of bathing when provided with water in a shallow vessel. A pair of hen harriers may be seen daily coursing over the same ground in company with gulls and curlews, which breed on the same ground. On the 4th of June I saw four young falcons (*Falco peregrinus*) taken from a nest from the cliffs near Garron Tower, the seat of the late Marchioness of Londonderry; they were nearly full-feathered. Several pairs of the chough build annually near the same spot.—*T. Brunton; Glenarm Castle, August* 23, 1865.

A List of Birds observed in the Parish of Bishop's Lydeard.

By Cecil Smith Esq.

The parish of Bishop's Lydeard, of the birds of which the following is a list, is situated in the county of Somerset, at the western extremity of the vale of Taunton Dean, and about eight miles east from the nearest part of the Bristol Channel, at the foot of the Quantoch Hills, a part of the parish, indeed, running up the southern slope to the top, and even a short way over the top, of these hills. There are two large ponds, of several acres each, Sandhill and Cotheleston, and other smaller ones; there are also various other old pits, out of which marl had at one time been dug, but which are now full of water, affording occasional accommodation to water-fowl and waders, as does the brook which flows for about three miles through the parish from west to east.

Osprey.—One specimen shot at the Sandhill Ponds, and is now in the collection of Dr. Woodforde.

Merlin.—As far as I know, only one specimen of this bird has been seen in the parish, and that one was shot by my father many years ago. This specimen is now in my collection.

Kestrel.—Not at all uncommon. I have a tame one, which I shot and winged slightly nearly three years ago; it very soon became quite tame, and will now take birds or mice from my hand; it, however, shows a decided partiality for birds; the only bird I have offered it which it has refused is a starling.

Sparrowhawk.—Also common here, rather more so than the last species, though it is more persecuted by gamekeepers. I tried the same experiment with a female sparrowhawk that I had done with the kestrel, but utterly failed.

Barn Owl.—Still tolerably common, but I am sorry to say not quite so common as they were a few years ago.

Tawny Owl.—Not uncommon in the copses and plantations.

Redbacked Shrike.—An occasional summer visitor, but rather rare, as I cannot answer for ever having seen more than three or four within the boundaries of the parish.

Spotted Flycatcher.—One of our most numerous summer visitors, though rather late in its arrival, generally from the 5th to the 9th of May.

Dipper.—Common in all the brooks in the neighbourhood. I do not think these birds do much, if any, mischief to the trout, as the brook here is full of trout, and I myself knew of as many as four water ouzel's nests this year within the part of the brook that runs through the parish. They are nearly, if not quite, our earliest nesters; last year I found a nest with four young birds nearly fledged as early as the 21st of April, and this year I found a nest with four eggs, too much sat upon to blow, on the 6th of April, though the weather up to that time had been unusually cold; indeed, during the last week in March there had been heavy snow-storms and severe frosts. This bird is locally known as the "water colley." "Colley" is also the local name of the blackbird.

Missel Thrush.—Very common.

Fieldfare.—Very common in the winter in the water-meadows. The

14th of November is the earliest day I have noted the appearance of the fieldfare, the 29th of April the latest. My tame kestrel, mentioned above, seems particularly fond of these birds, and, to judge by the quantity of remains I find about, the wild hawks must evince the same partiality.

Song Thrush.—Very common.

Redwing.—An equally common winter visitor with the fieldfare, but rather earlier. I have generally first seen it attacking the red berries on the May-bushes, after finishing which it generally retires to the turnip-fields, where it stays, except during a very hard frost, through the winter, not being nearly so numerous in the water-meadows as the fieldfare. I am afraid I cannot throw any light on the disputed point of this bird singing in England; though I have frequently listened to large flocks of them in the apple-trees late in the spring, I have only heard them twittering very much like a flock of starlings; in fact, unless seen, it is very difficult to distinguish one from the other.

Blackbird.—Very common, in spite of the war made against it by the gardeners. I have seen several pied varieties this winter, generally white about the neck and throat.

Hedgesparrow.—Very common; locally known as the "blind dunnoch."

Robin.—Equally common with the last.

Redstart.—A not very common summer visitor. I have usually noted its appearance between the 16th and 19th of April.

Stonechat.—Not at all an uncommon bird here during the greater part of the year, though they always leave during the middle of the winter for the more sheltered valleys on the Quantoch and other neighbouring hills, as I have seen them there at all times of the year, summer and winter; within this particular parish I have never noticed them during the winter, the 5th of March being the earliest date I have of their appearance, and they usually disappear about the middle of November.

Whinchat.—I have never seen any of these birds in this parish until this year, though I have been on the look out for them for some time for my collection. This year I got three male birds, all killed in this parish on the 18th and 19th of April. They were on the low hedges near the brook, perching on the highest twigs in the same conspicuous manner that stonechats do.

Wheatear.—I have only seen two of these birds in this parish. The first was in the spring of 1863, when I shot one in an open meadow immediately in front of the house. The other I saw on the 15th of April, in this year, in a meadow near the brook.

Sedge Warbler.—Common in the thick alder-bushes on the brook. Their first appearance seems generally to be between the 19th and 22nd of April.

Nightingale.—Rather uncommon and irregular in their appearance. The earliest note I have of their being heard in this neighbourhood is on the 21st of April.

Blackcap.—Tolerably common. The 20th of April is the earliest note I have of its appearance.

Whitethroat. — More common than the last. Considered by the gardeners to be one of their greatest enemies. The 19th of April is the first notice I have of the appearance of the whitethroat. I have always noticed the first appearance of this bird on the same day, and at the same place, as the sedge warbler, namely, among the alders on the banks of the brook.

Lesser Whitethroat.—I have one of these birds in my collection, which I shot in the meadows near the house early in the spring: it is the only one I have ever seen in the parish; had they been at all common I should certainly have noticed them oftener.

Willow Warbler.—Not very common: the one I have in my collection was picked up dead in the green-house. I have not been able to make any notes as to the arrival or departure of these birds, as they are not very common, and, arriving late after the leaves are out, easily escape observation for some time.

Chiffchaff.—Very common, but rather variable in the time of its arrival; in the last three years I have noted its arrival on the 15th of April, the 23rd of March and the 5th of April.

Goldencrested Wren.—Rather common.

Wren.—Very common.

Great Tit.—Pretty common in most of the orchards and gardens, but not so much so as some of the other tits; indeed, I am inclined to think it less numerous than either the cole or marsh tit.

Blue Tit.—By far the most common of all the tits.

Cole Tit.—Very common in most of the orchards and plantations.

Marsh Tit.—About as common, and in the same localities, as the last.

Longtailed Tit.—Rather more common, and as they flock more, they are more generally noticed than the last.

Pied Wagtail.—Very common all through the year. Locally known as the "dish-washer."

Gray Wagtail.—Not quite so common as the last.

Yellow Wagtail.—A rather scarce summer visitor: the earliest note I have of their arrival is April the 21st.

Tree Pipit.—An occasional summer visitor. I have one in my collection, shot in the parish. I have seen one or two others.

Meadow Pipit.—Very common, especially about the sheep-folds in the winter, when the sheep are in turnips.

Sky Lark.—Tolerably common all through the year. In the hard weather last year great flocks of these birds appeared in the allotment-gardens and in the rape-fields, where they did considerable damage, reducing the leaves of rape and any other green thing they could find to perfect skeletons, as if they had been eaten by the caterpillars.

Wood Lark.—Not at all common, only once having come under my observation in this parish, on which occasion I obtained one specimen for my collection.

Reed Bunting.—Very common near the brook and in all the hedges by the water-meadows. In the winter they flock a good deal with the yellowhammers, chaffinches and linnets.

Yellowhammer.—Very common; to be seen in all the hedges in the country, and, in winter especially, about the roads.

Cirl Bunting.—Very uncommon; I have never seen more than three or four of these birds here. Those I have in my collection I shot within the parish, after having been on the look out for some years.

Chaffinch.—The most common of all our birds, except perhaps the house sparrow, but, being more generally spread over the country, I should think it must be rather the more numerous of the two. It is locally known as the "whitefinch."

Brambling.—Not uncommon in the winter, when they are occasionally caught by bird-batters, and perhaps oftener than is supposed, as they are always set down as "whitefinches," and consequently not noticed. When caught in this way I have easily been able to tame them.

House Sparrow.—Very common, of course.

Greenfinch.—Also very common; generally known as the "green linnet."

Goldfinch.—Not so common as the last, but still by no means rare.

Siskin.—An occasional winter visitor to the alder-bushes near the brook.

Linnet.—Pretty common; to be seen more often in the winter and spring, when they flock, than they are in the summer, when they are dispersed among the thick hedges.

Lesser Redpole.—A more regular winter visitor than the siskin. I got one this year for my collection as late as the 7th of March; the breast was beautifully pink.

Bullfinch.— Rather common, especially in the orchards and gardens, where the gardeners rave against it. Generally known as the "hoot."

Crossbill.—A very rare visitor, having only been seen in this parish once, and that more than twenty years ago, on which occasion they not only visited this particular parish, but were very generally spread over the whole country. I have two in my collection, both of which were shot by my father in a fir-plantation near the house: they are both in their red plumage.

Starling.—There are very great numbers of these birds here. At times they collect in flocks of many hundreds, and at other times they may be seen singly or in small flocks. Their flocking in such large numbers is considered by the farmers to be a sign of rain; certainly I myself have generally noticed the larger flocks either during or immediately before wet weather.

Crow.—Not very numerous, owing to the constant war made against them by the gamekeepers.

Rook.—Very numerous, as we have three large rookeries in the parish, besides others at no great distance. I have little to add to what I said of the food of these birds in the 'Zoologist' (Zool. 8885 and 9043), except that once, very shortly after my last note, namely, on the 27th of March, 1864, I observed some rooks feeding on the carcass of a dead lamb in one of my fields, and during the dry weather this spring they sucked all the eggs in the earlier nests of the wild ducks.

Jackdaw.—Tolerably common.

Magpie.—Rather common, in spite of the gamekeepers.

Jay.—This bird not only suffers from the gamekeeper, like the last, but also from the ladies, who use the wings for feathers for their hats, but in spite of this double war it is still tolerably common.

Green Woodpecker. — Very common, especially in the older orchards.

Lesser Spotted Woodpecker.—Much more rare than the last. I have only seen three or four here.

Wryneck.—Also rare, though perhaps, owing to its not being easily seen, it may be more common than is usually supposed.

Creeper.—Very common in all the orchards and plantations.

Nuthatch.—Not quite so common as the last, but still by no means rare in the same localities.

Cuckoo.—Tolerably common. The earliest note I have of their appearance is the 14th of April.

Kingfisher.—I am glad to say this beautiful bird is tolerably common near the brook, though not so common as the water ouzel.

Swallow.—Very numerous. For the last three years I have noted their appearance here on the same day of the year, the 12th of April.

Martin.—Nearly as numerous as the swallow, but by no means so regular in their appearance, my notes varying from the 23rd to the 29th of April.

Sand Martin.—Not quite so common as the two last. The earliest note I have of their appearance is the 20th of April; this year they were very late, for though I was watching for them I did not see any till the 2nd of May.

Swift.—Also very common. The earliest note I have of their appearance is the 28th of April.

Ring Dove or Wood Pigeon.—Very common; in fact, rather too much so, as they are undoubtedly very mischievous, both to corn and turnips, and that without the compensating good done by rooks and most other birds. I found a wood pigeon's nest, with young birds nearly ready to fly, last year, as late as the 11th of October, and I see there is one still later mentioned in the 'Zoologist' (Zool. 9361).

Stock Dove.—Rather rare. I have one in my collection, which was shot by my keeper while roosting in a wood pigeon's nest. I also have one in my aviary, which was picked up wounded, but has now quite recovered and is tolerably tame.

Turtle Dove.—Not sufficiently common for me to have noted with much accuracy the time of its arrival or departure; there are, however, a few nests of these birds here every year.

Pheasant.—Pretty common, there being one or two rather strict game-preservers in the neighbourhood.

Black Grouse.—A few in that part of the parish which runs up on the Quantoch Hills.

Partridge.—Generally common all over the parish.

Golden Plover.—An occasional winter visitor. Last winter there were considerable flocks of them in the water-meadows, where they remained till late in the spring, indeed as late as the 30th of March, which was the last I saw of them. I had one brought me that had been shot by one of the farmers about the 20th of March; it had nearly acquired its black breast.

Peewit.—A constant winter visitor, but irregular both in the time of its appearance and in its numbers. This winter they were very numerous, and stayed as late as the 1st of April.

Heron.—Not at all uncommon about the brook and the different ponds; indeed I have seen as many as five walking about at one time by the part of the brook which runs through the fields in front of my house.

Green Sandpiper.—Occasionally to be seen about the pits in the lower parts of the parish. I saw a few last September for the first time for some years, and this year, on the 8th of August, I had two brought to me by one of the farmers, who had shot them near the same place I had seen them in last year: they are now in my collection.

Common Sandpiper.—A regular summer visitor, though not a numerous one. April the 17th is the earliest appearance of the common sandpiper that I have been able to note.

Woodcock.—Tolerably common, but varying much as to number in different years.

Snipe.—A pretty numerous winter visitor. Last winter, I suppose owing to the dryness of their feeding-grounds, these birds were extremely scarce. About the middle of October snipes generally make their first appearance, and the 1st of April is the latest I have noted.

Jack Snipe.—Generally much less common than the last; but this winter the usual order of things was reversed, and the jack snipe was the more numerous of the two.

Land Rail.—Tolerably numerous, though varying much in different years. This year they were very late; I did not hear them till the 2nd of June, though they are usually to be heard by the end of April.

Spotted Crake.—As far as I know, only one specimen of this bird has been obtained in this parish; it was shot in a rushy meadow near the eastern extremity of the parish.

Moorhen.—Very common by the brook, and in all the pits and ponds in the parish. There is one young one just out of the nest in my pond now, as late as August the 10th.

Bald Coot.—Common in the two large ponds at Sandhill and Cotheleston all through the year. When these ponds freeze the coots occasionally pay me a visit, as my pond does not freeze so easily, but they never stay here long.

Wild Swan.—One specimen was shot by my father on this pond on the 30th of December, 1829; there was another with it, which escaped.

Mute Swan.—There are some kept both at the Sandhill and Cotheleston Ponds, where they breed. They occasionally pay me a visit, but I always have to drive them away, as they bully all the other wild-fowl on the pond; I should otherwise encourage them, as it is a very pretty sight to see several of them flying over together.

Wild Duck.—Tolerably common through the winter in the ponds and pits, and occasionally in the brook; last winter both teal and wild ducks were very scarce, as all the ponds and pits froze.

Teal.—Nearly as common as the last, in the same localities.

Pochard.—An occasional winter visitor.

Tufted Duck.—Rather more common than the last, but still only an occasional winter visitor.

Goldeneye.—One or two specimens, young birds, have occurred on the Sandhill Ponds.

Smew.—One specimen, a female, was shot by my father on the Sandhill Ponds on the 20th of January, 1840; it is now in my collection.

Sclavonian Grebe.—One specimen was shot by Mr. Esdaile, on his pond at Cotheleston, and is now in his possession.

Herring Gull.—On the legal maxim, "Cujus est solum ejus est usque ad cælum," I may number this and the following species as belonging to this parish, for they are often seen flying over, especially in rough weather.

Common Gull.—Occasionally seen flying over, like the last. This ends, at present, the list of birds to be found in this parish.

CECIL SMITH.

September, 1865.

Ornithological Notes from North Lincolnshire.
By JOHN CORDEAUX, Esq.

(Continued from page 9774.)

SEPTEMBER, 1865.

Blackheaded Gulls.—It is not unusual to see these gulls, like swallows, busily hawking for moths and flies. In some days in the early part of this month I frequently observed them thus employed, flying with light and buoyant motion backwards and forwards over the marshes and the fore-shore of the Humber, and certainly in this extraordinary insect year they would have but little difficulty in procuring an ample meal. As far as I could ascertain, the particular object of their pursuit was confined to one species of fly, the common crane-fly (the "daddy long-legs" of our young days). I never before remember having seen such myriads of these long-legged pests as for a time swarmed on the grass-lands in these marshes: it was almost impossible to place one's foot on the ground without treading on some, and in every direction, and as far up as it was possible to discern, the air literally swarmed with them: from their slow and ungainly flight they fell an easy prey to the gulls, which certainly made good use of the opportunity thus afforded them of obtaining a livelihood. Although not able to compete with the easy, graceful sweeps and rapid turnings of the swallow, they exhibited an uncommon aptitude for this pursuit: sometimes a gull would remain poised for a moment, like a tern, and then descend rapidly for a few feet; now one would as suddenly dash upwards, and often in endeavouring to take a sharp turn, to capture some passing fly, would for a moment lose its balance and topple half over in the act of grasping its prey. These flies continued in the neighbourhood about ten days, when they gradually decreased in number and finally disappeared. Millions were daily driven over the banks by the land breeze, to be for ever extinguished in the mud-flats of the Humber.

Late Partridges.—I knew of a nest of young partridges which came out of the shell on the Ist of September, and got safely away to the shelter of a strong piece of wheat stubble, where I hope at some future time again to make their acquaintance.

Terns.—Large flocks of terns were seen in the Humber during the first week in September. It is seldom we see them in any great number far up the river, unless driven in by stress of weather. Previous to high winds and rain I have known hundreds assemble about the mouth of the Humber. This large collection of terns, as far as I could ascertain, consisted of but two species, the common and lesser terns, in about the proportion of twenty of the former to one of the latter species: two which I procured were the so-called common species. It is a most unusual circumstance in this neighbourhood to see so many together at one time.

House Sparrow.—It is extraordinary what a small hole these troublesome birds contrive to insert themselves into for the purpose of nesting. This habit is not, however, in all cases unattended with danger to the intruder. In this district, where nearly all the houses and buildings are covered with tiles, sparrows frequently contrive to get under the tiles, by the small space left by chipping off the corner of the tile to make it fit in with the succeeding tile. I lately observed on the roof of a barn the carcasses of five sparrows hanging by the neck from these small holes': the birds had evidently inserted their heads underneath the tiles in their endeavours to force a passage, and in drawing them back again had been securely trapped in the angle between the two tiles, and had thus perished miserably.

Cormorant.—These birds do not altogether confine themselves to a marine diet, but where fresh-water fish abound will go far inland to procure them. They are commonly seen on some of the Welsh lakes: Lake Cwellyn, famous for its trout, is a favourite haunt of the cormorant, where, when not employed in fishing, they take their station on the large boulders near the margin of the llyn; some of these stones are quite white with the droppings of these harpies. During a recent visit to this lovely lake I heard, late in the evening, the cry of the cormorants echoing through the mountains, and early the next morning, when rowing across the llyn, put one up from the chaos of boulders near the foot of the Mynydd Mawr: it turned out one of the common species.

Gray Wagtail.—This bird is never seen in Lincolnshire during the breeding-season, although it is common enough during the winter months. They appear to resort, during the summer more especially, to the mountainous districts of England, and I observed them to be common everywhere through North Wales, enlivening the banks of the mountain-streams and the shores of the lonely llyns, probably retiring to the lowlands on the approach of winter.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
October 2, 1865.

Ornithological Notes from Norfolk, during August and September.

By HENRY STEVENSON, Esq.

(Continued from page 9577.)

A FINE pair of Montagu's harrier, with a nestling still retaining much down amongst its young feathers, were sent to a bird-preserver in this city, about the middle of July, having been killed on the river near Brandon, where they had evidently bred this summer.

August 4. An immature bird of the great spotted woodpecker, shot at Framingham Earl, near Norwich, where I have reason to believe they nest every year.

August 5. Two specimens of the little stint (*Tringa minuta*) were sent to me from Salthouse, where a small flock had been seen on the beach. The appearance of these birds, which had lost but little of their summer plumage, shows how early some species of this class commence their southward migration.

August 6. A young ornithological friend, who is accustomed to dissect and stuff such birds as fall to his own gun, informs me that, on the above date, he killed a female nightjar, which was flying in company with some eight or ten others, and, strange to say, on clearing out the cranium, he discovered not less than twenty-four white worms, from half an inch to an inch long, perfectly lively, in the interior of the head and the soft inner portions of the eyes.

August 23. Wednesday, the 23rd of this month, was remarkable for the extraordinary number of birds, which, from about nine o'clock in the evening until three or four o'clock the next morning, were heard almost incessantly over the city, attracted no doubt by the glare of the gas-lamps. The night was extremely dark, and the close sultry air foretold the storm, which, about 2 A. M., culminated in one terrific flash of lightning, accompanied by a deafening peal of thunder and a perfect deluge of rain, for nearly an hour. I first heard the cries of these birds myself about ten o'clock, and listened to them for more than an hour in my garden, without being able, even with the aid of adjacent gas-lamps, to distinguish anything. By their notes the main body seemed to consist of golden plovers, their plaintive whistle sounding most melodiously in the still night air, and with these I fancy I detected a few peewits, and now and then the cry of the redshank, or at longer intervals, as if detached from the others, the note of some species of tern. As usual, on such occasions, the flocks seemed to pass backwards and forwards, calling incessantly to keep their numbers together; now apparently just overhead, and so low down that a shot from a fowling-piece must inevitably have done execution amongst them; now dying away in the distance, only to return again; and thus throughout the night they kept hovering round, and were heard as noisy as ever both before and after the storm. So great was the uproar occasioned by their unusual numbers that many persons were awakened by them, and this strange evidence of nocturnal migration became a general topic of conversation for some days. All kinds of stories were, of course, in circulation as to the species composing this autumnal flight. Owls had been heard to hoot by the road-side; large white birds, *as big as wild geese*, had been seen dashing round the lamp-posts; and one man was reported, on the *best authority*, to have fired up at the noisy throng, and to have found two or three golden plovers dead in his garden next morning. Unfortunately, however, for this apparently convincing statement, I found, on making inquiries of the individual himself, that he had merely said, "*if* he had fired his gun he must have killed some of them, they flew so low." Thus much, then for mere rumours, but although the cries of such birds over the city, at certain periods in the autumn, is not an uncommon circumstance, the numbers and amount of vociferation on this particular occasion were very remarkable, the latter induced no doubt by the coming rain, the term "pluvialis" being applied to the golden plover, from its restless nature during unsettled weather. As far as I could learn, they were heard for several miles around the city, and in every direction; but I cannot ascertain that any were seen on the following morning, as might have been expected, resting in the fields or meadows in the surrounding neighbourhood. On referring to my note-books for the last fifteen years, I find records of several similar instances, under the following dates:—1850, November 29th, December 1st; 1851, October 21st; 1856, August 20th; 1857, October 13th; 1860, August 14th. In every case I have noted that the nights were very dark (and hence the attraction of the city lights would be much greater), and on the 20th of August, 1856, the weather had suddenly changed to wet with incessant rain for twenty-four hours, causing a moist harvest time, as in the present year. As a proof that the golden plover and other allied species commenced their southward movements as early as the middle of August, though for the most part passing us unheeded on their nocturnal course, I may also add that in the same week of August, 1856, I was shown two young golden plovers, quite fresh, which had been picked up dead under the telegraph-wires on the Yarmouth line.

In connection also with the occurrence of these birds in Norfolk, I must also direct the attention of your readers to a note in the 'Field' of September 9th, in which a correspondent signing himself "Philornis" writes of an extensive "flock of wild-fowl," as passing over the town of Leicester about eleven o'clock on the very same evening (September 23rd). "Attracted by their loud notes," he says, "I opened the door and stepped out, and saw the dark outline of a flock of birds going in a south-westerly direction. There was not light enough in the sky by which to make out the colour, size, or exact species of them; but they appeared to be a straggling flight of Brent geese, accompanied, however, by birds of smaller size. This I gathered from the different notes they uttered. The majority were unquestionably geese of some kind or other, and their attendants were, I think, of the plover species. A friend of mine who heard them fancied he could detect the note of an owl among the rest."

August 27. A small flock of turnstones seen at Blakeney already; a young bird of the year was shown me to-day.

September 3. I never remember to have seen any notice of the partiality shown by our common hedgesparrow for our turnip-fields in the early part of the autumn. I have frequently noticed, whilst partridge-shooting, the number of these little creatures that rise singly here and there amongst the swedes or "whites," flying a short distance only to settle again, or shuffling along between the ridges, more like mice than birds. They are not confined, also at these times, to the vicinity of the hedges, but are scattered generally over the fields, finding probably some favourite grub or insect on the leaves or roots of the turnip.

September 12. Mr. J. H. Gurney, jun., informs me that a pigmy curlew was killed at Blakeney on the above date, and on the same day he observed a flock of turnstones and a skua gull. The pigmy curlew is not unfrequently met with in that locality, but occurs for the most part singly, or associating with a flock of dunlins. In the 'Field' of the 16th of September, Mr. F. Hele, of Aldborough, Suffolk, states that no less than fifteen of these rare sandpipers had been killed at Thorpe and other neighbouring localities, in August and the beginning of September, with three or four little stints and two Temminck's stints.

September 13. Some five or six couples of bartailed godwits were exposed for sale in our fish-market, in every state of change from summer to winter dress, one, however, still retaining its full breeding plumage.

September 16. The present season would appear to be somewhat prolific in rare Tringæ, as a fine specimen of the pectoral sandpiper was killed on the above date, at Caistor, near Yarmouth, and was sent, in the flesh, to a Norwich bird-stuffer for preservation. Unfortunately a shot had rendered the sex undistinguishable by dissection, but the bird is somewhat smaller than some I have seen, and has still much trace of the summer plumage on the head and back. This is the third example known to have occurred in Norfolk. The first, a female (as also the first known British specimen), was shot on Breydon muds on the 17th of October, 1830, and came into the possession of the late

Mr. J. D. Hoy. The second, in Mr. J. H. Gurney's collection, was also procured near Yarmouth, on the 30th of September, 1853.

September 24. A fine adult gannet, killed on Breydon,—a rather unusual event, as, except in stormy weather, these birds keep out in the "Roads," more particularly the old ones.

On the 23rd a fine young common buzzard was shot at Beeston, near Norwich.

H. STEVENSON.

Norwich, September 30, 1865.

Ornithological Notes from West Sussex.

By W. JEFFERY, jun., Esq.

(Continued from p. 9718.)

AUGUST, 1865.

Blackheaded Gull.—Saw a bird of this species on the 6th, which to all appearances had not commenced the autumnal moult.

Tree Pipit and Ray's Wagtail. — These birds have been more frequently heard than seen, passing over (generally in a southerly direction) since about the end of the first week in August, not in flock, but usually two or three together. About the 22nd, however, the wagtails seemed to be rather more numerous for a day or two, as many as from ten to twenty being seen together. I shot four on the 22nd, all very different in appearance from the richly coloured males which pass this way in the spring of the year. I think at least three of these were birds of the year, the fourth may have been an old female.

Pied Wagtail—During the latter part of the month (from about the 14th) pied wagtails have been very numerous on pastures, road-side commons, and other such places where cattle are to be found. They do not stay long in one place, but keep passing on. As a rule they are not so shy, nor do they fly so high, nor so far at a time, as the Ray's wagtail and tree pipit, merely passing from one meadow to the next, and so on. I have not as yet been able to detect a single specimen of the white wagtail amongst the numbers of the common species which pass this way every spring and autumn, though Captain Knox, in his 'Systematic Catalogue,' tells us that it has occasionally been obtained in Sussex.

Wood Sandpiper.—One killed in or near Pagham Harbour, on the 15th, is now in my collection. This is a rare bird in Sussex; Captain

Knox mentions four having been obtained near Worthing, in September, 1851. This, however, is the only specimen that I have known to be killed in this neighbourhood.

Swift.—Saw about thirty on the 20th, flying in a southerly direction, in the evening; none seen since this. On the 17th I shot a very light-coloured, nearly white, specimen.

Redshank.—Has been observed on the coast throughout the month, tolerably numerous. Greenshank seen about the middle of the month: turnstone rather earlier. The gizzard of a redshank dissected contained some small winged insects.

Blacktailed Godwit.—A bird of this species was shot at Pagham Harbour about the 26th. Five were seen, but only this one obtained; I believe it to have been a young female. The measurements, taken before skinning, were as follows:—length 14 inches; extent of wing 29 inches, from carpal joint to tip of longest primary 8¾ inches; bill along ridge 3¼ inches. The contents of the stomach consisted of small gravels and marine shells. The two specimens that I have before obtained, both in the month of August (see Zool. 9289), were killed near fresh water.

Ruff.—A specimen killed at Pagham on the 26th. I have obtained the ruff on two or three former occasions in the autumn; and in April, 1861, one was killed at Fishbourne, which had partially resumed the long feathers which form the ruff in the adult bird.

White Stork and Gray Wagtail.—On the 14th I saw a fine specimen of each of these rare British birds at Mr. Pratt's, Ship Street, Brighton. The stork had recently been killed near Hailsham, and sent to him for preservation, and the wagtail was shot by his son near Shoreham in the spring of the present year.

SEPTEMBER, 1865.

Gray Wagtail.—This species is pretty regular in its autumnal migration, usually making its appearance during the first week in September; I first saw it this autumn on the 3rd. The gray wagtail is solitary in its habits, and is never, while in the south, seen in flocks, as are the others (pied and Ray's); indeed, if two happen to meet, one is certain to chase the other away. Very frequently during these chases they utter a pleasing little song, and I believe this is the only time that they are heard to sing while with us.

Green Sandpiper.—Has been very scarce of late; one seen on the 5th in the forenoon, flying northward.

Tree Pipit and Ray's Wagtail.—A few heard passing over as late as the middle of the month.

Pied Wagtail.—Pied wagtails have not been quite so numerous this month as last, although considerable flocks have at times been observed, and some as late as the 30th. On the 24th I saw about fifty together; this was towards sunset.

Chiffchaff.—I have heard one of these birds, probably the same one, from the 1st to about the 13th. Willow warbler heard at the end of the month. Sedge warbler occasionally seen.

Meadow Pipit.—During the last fortnight meadow pipits have been very abundant. Some few of these birds breed about here, but, strange to say, so far as my experience goes, they prefer either the downs or the vicinity of the sea to the land lying between the two, during the breeding-season; since about the 17th, however, they have been numerous everywhere.

Missel Thrush.—Missel thrushes congregate now; saw a large flock on the downs on the 10th, but no ring ouzels seen yet.

Wryneck.—Shot one on the 25th. This must be much after the usual time of its departure from this country. The stomach of this bird was filled with remains of the small yellow ant.

Kingfisher.—Can any reader of the 'Zoologist' say where the great part of the kingfishers breed? It is unusual to see a kingfisher about here in the breeding-season, and still more so to find a nest of that bird, and yet every autumn we see numbers of them, both old birds and young. They are first seen about the latter end of July, and by the first week in August are constantly seen and heard. Is there a general migration (southwards or otherwise) of the kingfisher at this season? I think we do not see so much of them in the winter as just now; they then frequent salt water more. I am not aware that any kind of food is more abundant about here just now than at other times.

W. JEFFERY, JUN.

Ratham, Chichester, October 7, 1865.

Record of a Day in Kaffraria. By Capt. G. E. BULGER, H.M. 10th Regiment.

(Communicated by P. H. GOSSE, Esq., F.R.S., &c.)

Windvogelberg, Thursday, October 8, 1863.—The early morning was quite cold, but soon after the sun rose the air began to get warm, and the day subsequently proved exceedingly hot. About 8 A. M.

B——, S——, H—— and I, having provided ourselves with all the necessaries for an abundant luncheon, started in Mr. Ferreira's buck-wagon for the Kei Poort,* that is to say the place where the Zwarte Kei† runs through a pass in the hills. Our vehicle, drawn by ten oxen, was one of the ordinary tilted wagons of the colony, though a good specimen of its kind, and the only representative of a seat was a sort of frame-work, upon which, I believe, during long journeys it is the custom to stretch a mattrass and bedding.

Our route lay over the nek‡ of the Windvogelberg, just above the Post, and thence along the Tylden road to the valley of the Kei. The descent, after we had crossed the nek, was steep and sudden, and the track much broken by ruts and large stones, which rendered the jolting and shaking something positively painful, exceeding my worst anticipations and all my previous experience in land travelling.

After about three hours of such journeying, through a country covered with coarse grass and a thin growth of mimosa trees (*Acacia horrida*), we reached our destination, and outspanned§ within two hundred yards of the river. The distance between the Post at Windvogelberg and the Poort is said to be eight or nine miles, and we supposed that the estimate was nearly correct, judging by the time the journey occupied, and the rate at which the oxen travelled.

Before we commenced the descent I have spoken of, S—— saw a paauw‖ (*Otis*) of some kind fly across the road in advance of us, and he immediately gave chase, in the hope of getting a shot; but fortune did not so favour him, and the bird continued its flight for a very long distance, finally disappearing on the tops of some hills upon our right. Just as S—— got back to the wagon, a huge green snake was espied crossing the road, and an immediate onslaught was made upon it: the creature was speedily despatched by the aid of the long wagon-whip, and its carcase deposited in the vehicle, to be taken home with us and preserved. Unfortunately the heat of the day defeated our intentions in this respect, and, on our return to the Post in the evening, decomposition had already set in, and so the snake had to be thrown away: it was a small specimen of the Bucephalus viridis of Smith.

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* The literal meaning of "poort" is gate: the expression is applied at the Cape to most of the passes through the hills.

† "Zwarte Kei," the Black Kei. It rises in the Great Winterberg Mountain, about 7000 feet above the sea. It is the main branch of the Great Kei.

‡ "Nek" means literally a neck. It is applied to the dips in the hills over which the roads generally run.

§ The colonial phrase for unharnessing and taking out horses or oxen from a vehicle.

‖ Literally "peacock:" the larger bustards are so called by the Cape colonists.

The Kei, so far as my observation extended, appears to follow a very winding course, and, on the whole, may be considered handsome, for the water, though thick and muddy-looking, is broken by little rapids in many places, and the banks are alternations of high krantzes * and low, reedy and grassy land, which is decked with weeping willows (*Salix gariepina*) of considerable size and much beauty. The average width of the stream is perhaps somewhere about fifteen or twenty yards, but it varies so constantly in this particular that anything like a correct estimate is next to impossible.

Immediately after our arrival we sallied forth from the wagon in different directions, in search of ornithological and botanical novelties, B—— and H—— going up the stream, whilst S—— took an opposite course, in which I speedily followed him. Everywhere gorgeous flowers were in bloom, rendering the country gay with their bright corollas, and relieving the dark hues of the krantzes with stars of scarlet, white and rose-colour. The strange but handsome Cotyledon orbiculata was very plentiful, and its bright red bell-like flowers appeared in every little nook or cranny of the rocks. Scarlet and rose-coloured Gladiolus, too, were growing abundantly, with a number of other kinds of ornamental herbs; but, conspicuous above all for its splendid beauty, was a little amaryllidaceous plant, displaying blooms of pendant trumpet-shaped corollas of the most intense and lustrous scarlet-crimson, which, only a few inches above the surface of the earth, contrasted strikingly with the bright green of the grass around them. This superb little plant I take to be that which Backhouse mentions in his 'Travels' as Cyrtanthus angustifolius, though Paxton, in his 'Botanical Dictionary,' describes angustifolius as orange, while he gives collinus and odorus as the specific designations of the only crimson kinds.

About one o'clock we reassembled for luncheon, and compared notes. We had all found the heat exceedingly great, and none of us had seen anything very new; indeed there were no birds with which we were not familiar at Windvogelberg, and almost the same may be said of the plants. S—— had got a shot at a pair of hadada (*Ibis sylvatica?*), but they were too far off to suffer much from his charge of small shot: he had followed the course of the stream for some distance along the edge of the water, returning over the crest of a high krantz, which extends, on the right bank of the river, from just below the drift,* where we had outspanned, for perhaps a mile or so. This krantz had been the scene of my explorations, but it produced me scarcely anything. I observed a long-winged hawk of some description, probably the rock kestrel (*Tinnunculus rupicola*), flying about the face of the cliff, here of considerable height, and running sheer up from the water's edge, where there were also numbers of the common swallows of the country, Hirundo capensis. A small wooded island close to the foot of the aforesaid krantz was equally unproductive, and, at the time of my visit, it appeared literally uninhabited. On the summit of the cliffs I met S—— returning, and, whilst we were sitting on a rock to enjoy the cooler air of the high land, a beautiful little dove, Turtur cambayensis, dashed past us, and shot down to the trees in the valley of the river. Here we got some bulbs of the splendid scarlet-crimson Cyrtanthus I have spoken of, and S—— had already secured those of another beautiful species of the same family, Cyrtanthus uniflorus, which has blossoms elegantly striped with purple.

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* Rocky precipices.

B——'s chief anxiety was to secure specimens of a very lovely scarlet reed-bird (*Loxia oryx*), of which he had seen hundreds in this place some two or three months ago, and also of the beautiful green spreeuw † (*Lamprotornis Burchellii*), one of the handsomest birds in the colony, its blue-green plumage possessing that wonderful metallic lustre, which varies in the different lights and flashes like polished steel; but the doctor was doomed to disappointment; not a scarlet finch was visible, and the few spreeuws which he met with were very wary, and kept out of reach of his gun.

H—— killed a good specimen of the common dove of these parts, Turtur semitorquatus, as also one of those curious but handsome birds which, I believe, are called "monkey-birds" in the colony, and sometimes "monkey spreeuws;" but they belong to quite a different tribe to that of the Lamprotornis, and are more nearly related to the hoopoes: Promerops erythrorhynchus is the scientific designation of the one I allude to, and it has glossy black plumage, with a long scarlet curved bill (which looks as if it were made of red sealing-wax) and scarlet feet.

After luncheon we started again for another short ramble previously to returning home, but, like the former one, it was not characterized by the discovery of anything very new. To the left of our camping-place, on the river-margin, is a patch of high rank grass and reeds, and, as I wound my way through this place towards the water, I knocked up a hare* (*Lepus rupestris*), which I might have shot if I had been careful, but, before I could get my gun ready, he was out of range. After this I obtained a pair of beautiful little sandpipers (*Charadrius zonatus*), which were feeding on the gravelly edge of a little tributary of the Kei. In this neighbourhood I also saw one of those most lovely birds, the longtailed Kaffir finch (*Loxia Kaffir*), but he made off when I approached, and disappeared amongst some fields. A few more doves—which, by the way, make an excellent pie—completed our list of trophies for the day, and we left the Kei at 4 P. M., arriving at Windvogelberg some four hours afterwards.

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* A ford.

† "Spreeuw" is Dutch for starling.

G. E. BULGER.

Frogs eaten by a Cat.—One of our cats has lately taken to catching frogs. A few days ago I saw her and her kitten playing with a mutilated frog, which she had brought into the kitchen and partly eaten, and our cook says this has been done several times recently.—*George Maw; Benthall Hall, Broseley.*

Sword-fish and Tunny off Penzance.—A large sword-fish has been seen in this bay repeatedly within the last three days. We were fishing yesterday off Lamorna, in about eight fathoms of water, and close in shore, when our attention was attracted by a noise in the water near us. It was caused by a large shoal of gerricks scudding very rapidly on the surface of the water. The appearance was as though the fish were actually swimming on the surface, with the larger portion of their bodies in the air, but this was probably an optical delusion, caused by the constant succession of fish coming to the surface. They passed close by us, less than five fathoms from the bows of our boat, and as they passed we saw in chase of them certainly one, and probably more than one, large tunny ("albacores," as they call them here). The tunnies were dashing about after their prey, almost on the surface of the water, and removed all doubt as to their identity by more than once springing clean out of water close by us.—*Thomas Cornish; Penzance, September* 13, 1865.

Life-History of Melitæa Artemis.—The eggs, which are somewhat flattened on the crown, are laid on the under side of the leaf of Scabiosa succisa (devil's-bit scabious), those leaves nearest the ground being selected for this purpose; the usual period of

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* My friend Mr. E. L. Layard, the curator of the Museum at Cape Town, informs me that this hare, though usually confounded with Lepus rupestris, is, in fact, a different species, unnamed as yet, I believe.

oviposition is from the beginning to the middle of June. In about a fortnight, that is, from the middle to the end of June, the young larvæ emerge; they have then black heads and ochre-coloured bodies: almost immediately after emergence they begin drawing together two or three leaves of the scabious or of the neighbouring herbage, and spin a slight gauzy veil over the interstices; enclosed in this domicile, they devour, in company, the under side of a scabious leaf, leaving only the epidermis, which very soon becomes brown in blotches: as soon as the little community has extracted all the nutriment from the leaf or leaves included within the first enclosure, it moves to other leaves, and by united labours the larvæ construct a much larger dwelling, sometimes even extending over the leading stem and enclosing the flowering stem with its apical flower-bud. Towards the end of summer the larvæ, then scarcely half-grown, become sluggish, and, ceasing to eat, they descend low down among the herbage, where they again spin a silken domicile, beneath the shelter of which they pass the winter: as soon as the plant begins to grow in the spring, these larvæ break up their winter establishment, and each seeks its own provisions, independently of the others, and without the protection of a web; indeed they seem quite fearless of exposure, often indulging in a noon-day siesta in bright sunshine on a dried leaf, or in any other exposed situation; this continues until the end of April, when, being full fed, the larval existence terminates: at this period the larva rests in a straight position, but falls off its food-plant when touched or disturbed, and forms a lax ring, the head tucked in and the anal extremity protruding. Head scarcely narrower than the 2nd segment, semiporrect, emitting stiff bristles: body obese, incisions of the segments well marked; 2nd segment with two short bristly obtuse spines on each side below the spiracles; the 3rd and 4th segments have each eight spines; the 5th and succeeding segments have each nine spines, the additional spine being mediodorsal, and the aggregate of these forming a mediodorsal series; all the spines are short, obtuse, scabrous, and furnished with bristles. Colour of the head black: body velvety black, irrorated with circular white dots, which are irregularly ranged in three principal but ill-defined series; one mediodorsal, the others spiracular; each white dot emits a black bristle from its centre; legs black; claspers pale smoke-coloured. It is worthy of remark that in the supply of this larva under my notice nine out of every ten were infested by ichneumonideous parasites; these emerged from the lepidopterous larvæ in the larva state, and spinning little silken cocoons outside the larva, fastened down the wretchedly atrophied but still living larva of the butterfly, and, fixing it immovably, left it to perish miserably: the number of these parasites in each larva varied from ten to twenty-six; the cocoons which they spun were of a pale sulphur colour, and were elongate-oval in shape: the majority of them emerged between the 18th and 25th of May, and proved to be a species of Microgaster. It would appear that but a small proportion of the larvæ of Melitæa Artemis escape this formidable parasite. The full-fed larva of Artemis generally selects some curled leaf or mass of tangled herbage, and thus concealed spins a slight silken coating over the surface of the object selected, and suspending itself by the anal claspers, changes to a pupa, which hangs in the same way. The pupa is short and obese, the head being transversely produced in front and broadly truncate; the base of each wing-case is slightly produced: the abdomen is very convex, its anal extremity bent under towards the extremity of the wing-cases, and the dorsal outline being almost semicircular; the caudal extremity is attached by the cremastræ to a slight web spun about the margin of the scabious leaf. Colour creamy white (changing, as the time of metamorphosis approaches, to a deep orange), variegated with black and orange markings; the cases of the legs have black markings only, but those of the antennæ are black and orange alternately, the latter colour in very small dots; the dorsum of the thorax has two conspicuous black lunate marks, each having a yellow dot behind it: the eight abdominal segments have each a transverse series of lunate black markings, and behind each of these, and partially enclosed by it, is a bright yellow spot with a nipple-shaped excrescence in the middle; the wing-cases are adorned with black markings. Prior to the final change the pupa assumes a darker and richer hue, approaching to dull orange, and exhibiting beneath the wing-cases the colours of the butterfly. The butterfly makes its appearance in about fourteen days; this period, however, depends in some measure on the temperature, a cold April delaying their final change for a few days: if the spring is warm and vegetation forward, the larvæ have a better chance of feeding up early, and the male butterflies begin to appear the second week in May, most of the females emerging some days later: this butterfly has a slow and gentle flight, and is very easily captured; it delights in damp meadows, and is fond of resting in the sunshine on leaves and flowers with expanded wings, and apparently enjoying the warmth: in cloudy weather it will allow itself to be taken by the hand from a flower on which it is resting, and at no time does it fly to any considerable distance from its birth-place: in the damp meadows near Leominster it occurs year after year in the same spot, and may be met with from the middle to the end of May with the greatest certainty. Copulation takes place in June, and oviposition commences soon afterwards. I am indebted to Mr. Merrin, of Gloucester, for a liberal supply of this very imperfectly-known larva: the same gentleman has most kindly furnished me with materials for compiling its history.—*Edward Newman.*

Proceedings of Societies.

ENTOMOLOGICAL SOCIETY.

October 2, 1865.—F. P. PASCOE, Esq., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'The Journal of the Royal Agricultural Society of England,' 2nd Series, Vol. i. part 2; presented by the Society. 'Proceedings of the Royal Society,' No. 77; by the Society. 'The Transactions of the Entomological Society of New South Wales,' Vol. i. part 3; by the Society. 'Hübner (Jacob), Verzeichniss bekaunter Schmetterlinge;' by W. F. Kirby, Esq. 'Exotic Butterflies,' Part 56; by W. W. Saunders, Esq. 'Revision of the hitherto-known Species of the Genus Chionobas in North America,' by Samuel H. Scudder; by the Author. 'The Zoologist' for October; by the Editor. 'The Entomologist's Monthly Magazine' for October; by the Editors.

Exhibitions, &c.

Mr. W. F. Kirby exhibited a female specimen of Sterrha sacraria captured by his brother near Brighton, on the 18th of July last.

Mr. J. J. Weir exhibited three specimens of Xylina petrificata, one of which bore great resemblance in colour to X. semibrunnea.

Mr. W. F. Evans exhibited two malformed specimens of Vanessa Atalanta; one of which, caught near Bradford, Yorkshire, in 1864, had the left antenna only half the length of the right; notwithstanding that it possessed the usual number of joints; the other, bred from the larva at Herne Bay, in August, 1865, had the wings on one side considerably larger than on the other.

Dr. Alexander Wallace mentioned that a specimen of Argynnis Lathonia had been seen, but not captured, by Mr. Harwood, at Colchester, during the previous week, a rather unusual time for its appearance.

Mr. Bond exhibited dried larvæ of Acherontia Atropos, Sphinx Ligustri and Macroglossa Stellatarum, preserved by Mr. Baker, of Cambridge, and retaining their colour as in life.

Mr. S. Stevens exhibited a box of butterflies, collected in Labuan by Lieut. de Crespigny.

Mr. M'Lachlan exhibited specimens of two species of Stenophylax, which had been sent to him by the Rev. G. T. Browne, St. Catherine's College, Cambridge, and which, together with an Ichneumon of the genus Paniscus, had been found in an ice-cave in the Swiss Alps. In reply to Mr. Browne's enquiry how the insects came to be in such a situation, he (Mr. M'L.) had been unable to give any explanation which was applicable to the Ichneumon, but with respect to the caddis-flies he had suggested that the cave might be connected with the outer world by some subterranean passage or stream, up the course of which the larvæ had travelled. This had drawn from Mr. Browne the following:—"There was no communication with the outer air. These flies were found at a very considerable depth in the earth, down a rock-fissure, a good hundred feet below our point of entrance, which was itself low down in a face of rock. At the bottom of this we came to a chamber, one corner of which was shut up by a curtain of ice—hermetically sealed up. We hewed a hole through it—all was utterly dark—and found only ice within, with a narrow low passage, about two feet each way, leading lower still into the earth; stones sent down gave the sound of water. The ice-roof of the ice-trough was thickly studded with these flies, standing still, but running swiftly when disturbed. I caught two, lying flat on my back and lowered by a rope. The other two were found on my dress and beard when I was dragged up again. The three that are alike [the Trichoptera] I have found in other ice-caves; the fourth, something like a huge flying ant [the Ichneumon] I have not found in such situations. Every one's idea must have been, What *could* they want with eyes?"

Mr. W. W. Saunders exhibited the bulb of an Orchid from New Grenada, which was covered with and had been destroyed by two species of Coccus: the insects fixed themselves on the bulb, which soon became wizened and withered, and the plant died under their suction. Both species were of the kind known to gardeners as "limpet-scales," one of them being about twice as long as broad, whilst the other was round and expansive, and looked like the half of a little bivalve shell; the young ones might be killed by washing the plant with a mixture of water and spirits of wine, but when they grew older and had a hard case over them this ceased to be effectual; and if poisons were applied to kill them they reached the root and killed the plant likewise. There seemed to be a continual development of these pests, and an entire absence of periodicity in their appearance; young ones were produced continually, and, though search had been made both by day and night, not a single male had been observed.

Mr. S. S. Saunders exhibited numerous specimens, preserved in spirit, illustrative of the transformations of the Strepsipterous insect, Hylechthrus Rubi: amongst them were the apod larva in a Hylæus nymph, another exposed by removal of the last segments of the Hylæus, and one extracted entire; a male nymph in the pupa-case, the operculum apart; a male imago with its wings erect, the pupa-case and operculum apart; females on their first protrusion, and another extracted entire on the second day. Also a parasite on Polistes Gallica, with the larvæ of each.

Mr. J. J. Weir enquired the use of the anal appendages of the earwig; there was no doubt that Staphylinidæ used their appendages for the purpose of closing or pressing in the wings after flight, and he believed it was mentioned in Kirby and Spence that earwigs occasionally used theirs in opening their wings; he had observed the small earwig (*Labia minor*) perform in this manner; the wings were partially protruded, and then pulled out by means of the appendages, and he had come to the conclusion that this was the natural function, or at all events one of the functions, of those organs, and doubted whether the wings could be expanded without the use of the appendages.

Prof. Westwood was inclined to think that the appendages were more ornamental than useful, and that their use, if any, was rather for the purpose of defence.

Mr. S. H. Scudder, Soc. Nat. Hist. of Boston, U. S. A. (who was present as a visitor), exhibited two fossil specimens (one the reverse of the other) of a gigantic Ephemera, which must have measured five inches in expanse of wings. This with some other fossil insects had been found by Mr. Hartt in the Devonian series of North America, in a ledge of rock which ran out to sea, so that they could be examined only at low tide; and respecting them Mr. Scudder read the following note:—

"*On the Devonian Insects of New Brunswick.*—There are in all ten specimens in Mr. Hartt's most interesting collection of the fossil remains of insect-wings from Lancaster, eight of which are reverses of one another, thus reducing the number to six individuals; of these, one, a mere fragment, belongs, I think, to the same species as another of which the more important parts of the wing are preserved, so that we have five species represented among these Devonian insects, and these remains are all, I suspect, composed of portions of the anterior wing alone. The data being thus fragmentary, the conclusions cannot be quite so satisfactorily determined as we could wish, but we can still discover enough to prove that they are of unwonted interest. Besides the peculiar interest which attaches to them as the earliest known traces of insect life on the globe, there is very much in themselves to attract and merit our closest attention. One of them is a gigantic representative of the family of Ephemerina among Neuroptera, some three or four times the size of the largest species now living, with which I am acquainted. Another borrows some striking points of the peculiar wing-structure of the Neuropterous family Odonata, and combines with them those of families remote from that, and even belonging to a distinct section of the Neuroptera, exhibiting to our view a synthetic type which combines in one the Pseudo-neuroptera and the Neuroptera, and represents a family distinct from any hitherto known. Other fossil insects, found in carboniferous concretions in Illinois, and described in 'Silliman's Journal' (N. S. xxxvii. 34), which Prof. Dana has kindly allowed me to examine, also belong to hitherto unrecognized families, exhibiting similar relations to these in-our-day-disconnected sections of Neuropterous insects; and a third species of Mr. Hartt's is a member of still another family of

Neuroptera, which finds its natural relations between the two described by Prof. Dana. A fourth, of which only an unimportant fragment was found, would seem to belong to the Neuroptera; but by some peculiarities of the minuter cross-veins, thrown off in the middle of the outer edge of the wing, in a most irregular and unusual manner, suggests no intimate relations with any known family, but must have belonged to a group of large and weak-winged insects. The fifth and last to be mentioned is of very striking interest, because, while it exhibits the peculiar venation which forms the well-known tympanum or stridulating apparatus of the male, in the Orthopterous family Locustariæ (though differing somewhat from that), it also most resembles the Neuroptera in all or nearly all the other peculiarities of its structure, and suggests the presence in the insect-faunæ of those ancient times of a synthetic type, which united the characteristics of the Orthoptera and Neuroptera, in themselves closely allied: this point, however, requires patient and severe investigation, and only my earliest impressions are here recorded,—made, however, immediately after a close examination into the relations of other fossil insects. I earnestly hope that this locality, from which these remains were disinterred, may receive a most careful and thorough examination. Hitherto the study of fossil insects has been mainly confined to those of much more recent date, and has resulted in shedding comparatively little light upon geological and palæontological questions; but these few remains, coupled with the pair of insects found in Illinois, induce us ardently to anticipate that the future study of fossil insects, drawn from such ancient strata as these, may lead to as brilliant and important results, in the elucidation of geological problems still open, in widening the range of our palæontological horizon, and in our general knowledge of the history of life on our globe in all its bearings, as have been reached by the study of the remains of animals of a more substantial structure, but which have hitherto been denied to the student of fossil Entomology."

Prof. Westwood mentioned that at the recent Meeting of the British Association, Prof. Grube had exhibited a fossil spider from the coal measures, which was perhaps identical with one figured in Petiver's 'Gazophylacium.'

Mr. Scudder mentioned that in the Brodie collection were fossil forms very much resembling some American spiders.

Mr. C. A. Wilson, of Adelaide, communicated another instalment of his notes "On the Buprestidæ of South Australia."

Prof. Westwood directed attention to M. Henri Deyrolle's recent work, 'Description des Buprestides de la Malaisie, recueilles par M. Wallace'; Mr. A. R. Wallace's collection of Buprestidæ had become the property of Count Mniszech, and M. H. Deyrolle had described no less than 355 species of that family.

The Secretary read the following account, with which he had been furnished, of the recent

Paris Exhibition of Insects.—"This curious exhibition has attracted the attention of men of science and agriculturists, but most particularly of those who are interested in the rearing of bees and silk-worms, which naturally occupy the chief places. The collection of bee-hives, some shown in operation, and of other matters connected with the rearing and management of these interesting insects, is considerable, and presents forms, in some instances, strange to English eyes. In addition to the bees themselves are specimens of their products and of the articles into which they enter, such as honey, wax, mead or hydromel, sweetmeats and confectionary. The largest portion of the exhibition, however, was occupied by matters connected with the production of silk. An admirably arranged collection was shown by M. Jules Rieu, of Valréas, in the department of Vaucluse, including the white and yellow cocoons of the Japanese silk-worms, introduced into France in 1863, and extensively bred by M. Rieu; green cocoons also from Japan, introduced in the present year; silk spun from these various cocoons; models of the frames and other materials used in the silk cultivation; and specimens of the insects themselves in the various stages of their existence. M. Guerin-Méneville, M. H. Givelet and others exhibited numbers of the Bombyx Cynthia, and of other worms produced by the crossing of the former with the Bombyx arrindia, feeding on the leaves of the Ailanthus, and also several chambers containing cocoons and hundreds of enormous moths depositing their eggs. Others show products, preparations and sketches of the Bombyx yamamai, a very large green worm that feeds on the oak, and of many other new and curious species. But the Ailanthus worm seems to have attracted the greatest attention, and its cultivation is rapidly extending. M. Givelet, who published a report on the subject not long since, read a paper at the exhibition, and promises a more complete account of the best method of bringing this worm into cultivation on a large scale during the coming winter. This gentleman commenced planting the Ailanthus at the Chateau of Flamboin in 1860, and, after some misfortunes and disappointments, completely succeeded in the breeding and rearing of the worms. He reports that during the present season he has collected about twenty thousand cocoons, and that about three times that number are now on the trees in his plantation. The long continuance of hot weather had greatly favoured the experiments made in the rearing of Bombyx Cynthia. In the enclosure within the Jardin d'Acclimatation, in the Bois de Boulogne, may be seen at the present moment a large number of these worms of the third generation of this season, feeding in the open air on the Ailanthus, or spinning their cocoons. The creatures are of great size, and seem to be in perfectly healthy condition. The cocoons are generally formed at the extreme end of the branches, or rather of the leaves, for the Ailanthus has long compound leaves, with many leaflets, like the ash, where no bird, however light, could rest and make a meal of the occupant, and the worms take the curious precaution, before commencing the cocoon, to attach several threads of their web to the leaf-stalk as high as the third or fourth leaflet, so that, if that on which the cocoon is fixed were to be broken from its stalk, it would still be held pendant by these stay-threads. The Museum of Natural History at the Jardin des Plantes, contributed a fine collection of insects, with specimens of timber and other substances which have suffered from their ravages; also some remarkably large specimens of lobsters and crayfish from American waters. Another remarkable collection of insects is from Mr. T. Glover, the entomologist attached to the Department of Agriculture at Washington. M. E. Mocquerys, of Evreux, has an admirable exhibition of coleopterous and other insects which feed on the vine, cereals and other industrial plants. Dr. Eugène Robert contributed a series of sections of trees ravaged by xylophagous insects, together with illustrations of the methods which have been adopted by the authorities of Paris and other places, under his superintendence, for their destruction. There were other collections of more or less importance, and, amongst the curiosities of the exhibition, a landscape produced entirely by the arrangement of various coloured beetles. Apparatus and powders for getting rid of certain classes of noxious insects were numerous in the exhibition, amongst which, judging from the number of medals and awards granted to the discoverer, the powder produced from the flowers of the Pyrethrum Willemoti seems to hold the highest place. It appears that the flowers of various plants of this family are extensively used in Persia, Armenia and other countries for like purposes. The Persian powder is said to be composed chiefly of the flowers of the Pyrethrum carneum, while the Armenians prefer the Pyrethrum roseum."

Dr. Alexander Wallace exhibited living specimens of Bombyx Cynthia in all its stages,—eggs, larvæ in four successive stages, cocoons and imago,—bred by him during the present year; also a branch of the Ailanthus glandulosa, having attached it to a paper cot containing eggs, to illustrate the mode in which the eggs were placed on the living tree out of doors the evening before hatching out. He also exhibited the mode of keeping the cocoons during the winter, strung up in chaplets of fifty each; the perforated zinc cylinders in which the moths were retained for copulation and the laying of eggs; the method of gathering and hatching out the eggs; and specimens of the silken thread which the larva before spinning the cocoon wove from the foundation of the cocoon along the leaf-stalk to the bough, so that though the leaf-stalk in winter became detached from the bough the cocoon would still remain suspended instead of falling to the ground. Specimens of the silk obtained both by carding and winding were also shown, and several hundreds of the cocoon and imago were distributed amongst the Members present. Dr. Wallace believed he was the first person in England who had attempted to rear the Bombyx Cynthia on an extended scale out of doors without any protection; Lady Dorothy Nevill was the first in this country to rear the species successfully, but this was done under the protection of nets; he was under great obligation to Lady Dorothy for having in the first instance supplied him with eggs, and with specimens of the Ailanthus; he had, in March, 1864, planted out by the side of a railway (see Zool. 9143) 3000 Ailanthus trees, which were then two years old; some died owing to the prolonged drought in spring, and during that year their growth was scanty; but in 1865 their growth had been very rapid, shoots six feet long and an inch in diameter having been put forth by May: the soil was a close loam. He had made another small plantation in his garden for the purpose of observation and to serve as a nursery; on this he had placed 18,678 eggs, which were laid between the 1st and 22nd of July; they were laid in the interstices or perforations of the zinc cages, rubbed off upon blotting-paper, and a glass placed over them; the paper could be moistened if necessary; in twelve or fourteen days, according to the greater or less heat, the eggs hatched, prior to which, however, batches of them were pinned in paper cots or bags on the trees in the nursery: once established on the trees, they grew continuously, and when the larvæ were about half-grown they were transferred to the trees in the larger plantation, and distributed over them; from these he had, in September last, harvested 5318 cocoons, very few of which were ichneumonized. No larvæ were observed to be eaten by birds, though sparrows were abundant, and were seen to pick off the Aphides from cabbages growing under the Ailanthus trees; he had lost about 200 by disease; but the greatest destruction was in the nursery during the first two changes, when spiders, lady-birds, earwigs and Carabi thinned their numbers to some extent; in 1864 wasps were observed to carry off the young larvæ, and likewise ants; there appeared also to be a parasitic fly (Tachina), and tom-tits were destructive to the larvæ. The growth of the tree was most surprising, and after the leaves had been entirely consumed by the silkworms, another growth of foliage was emitted sufficient to nourish a second brood of worms. Of his first brood, 563 moths hatched between the 22nd of May and the 27th of July; of these 230 fertile pairs were obtained; their eggs were laid from the 24th of May to the 26th of July, and were 37,000 in number; the first larva from these hatched on the 11th of June, spun up on the 15th of July, and emerged on the 20th of August. Of another batch of larvæ, the eggs of which were laid on the 6th and 7th of June, the first hatched out on the 23rd of June, spun up on the 20th of July, and emerged as a moth on the 23rd of August,—an interval of thirty-four days,—which spoken of in France as a very short period for the egg to develope into a cocoon, whereas in this instance the change took place in twenty-eight days. Of his second brood, 101 moths hatched between the 21st of August and the 21st of September; thirty-six fertile pairs were obtained; their eggs were laid from the 23rd of August to the 7th of September, and were 3438 in number; the first larva from these hatched on the 7th of September, the last on the 19th of September, and the first would in two or three days from that time be undergoing the last moult prior to spinning. Thus, owing to the extraordinary warmth of the season, a second brood would be obtained, and, by commencing earlier in the year than he had done, this might be made more certain; indeed Lady Dorothy Nevill had her second brood spun up in cocoon in September. The silk was for the first forty-eight hours quite white; it then became moist, especially at the lower end of the cocoon (perhaps from some emission of the caterpillar), and the colour changed to dirty gray. The larvæ, cocoons and moths all seemed to be finer in this country than in France, as if the soil and climate were more suitable; and all that was now required was machinery to wind the silk, which had not yet been done in this country, though it had in France and Italy. Dr. Wallace considered the experiment a great success, and thought the possibility of cultivating the silk-worm in this country was proved; ailanthiculture had one great advantage over the culture of the mulberry silk-worm, inasmuch as a crop of silk might be obtained from the Ailanthus tree in its third or fourth year, and in its tenth year it would be in full bearing, whereas it took from twenty to twenty-five years to establish a plantation of mulberry-trees. It might be roughly calculated that the trees might be planted at the rate of one to every square yard, and one tree would yield fifty cocoons; 1000 cocoons would produce 1 ℔. of silk, which might be estimated to be worth £1 when spun: on the other hand, one boy could attend to an acre of silk-worms, and all the manipulation of the worms might be done by women and children of ten years old, so that the expenses would be trifling.

Mr. Scudder mentioned that in America use had been made of the larvæ of Bombyx Cynthia to make from the silken matter contained within them the fine lines by which fish-hooks were fastened. He also referred to the success of M. Trouvelot in cultivating the oak-feeding Bombyx Polyphemus (see Zool. 9620), of which he had brought over some cocoons for M. Guérin-Méneville. M. Trouvelot had found the birds to be his greatest enemies.

Mr. W. W. Saunders said the Ailanthus would grow almost anywhere, and seemed to prefer a stiff soil; he had it growing on clay, and it had flowered, fruited and seeded. With reference to Prof. Westwood's statement, at the previous Meeting, as to the comparative density and tenacity of Ailanthus, oak and elm, he remarked that the qualities which made wood useful as timber were strength, elasticity and durability, and that Ailanthus was a poor and insignificant wood, and, like all quick-growing woods, would be useless as timber.

The Rev. Hamlet Clark drew attention to a letter signed "S. G. O." in 'The Times' of the 30th of September, on the subject of the prevailing disease amongst cattle, in which the author suggested a connexion between the extraordinary atmospheric condition of the present season and the cholera, rinderpest, and other epidemics which were rife. The following is an extract:—

"Some particular atmospheric action, acting *per se* or in combination with existing matters, whatever they may be, is at work pestilentially affecting animal life. If we had the same opportunities for observation, and an equal interest in using them, I have no doubt that we should find there is disease in the insect world, probably in all living creatures, or at least in very many classes of them. * * * * It is reasonable to assume that any atmospheric condition which seriously affects one class of animal life shall more or less act on all such life. * * * * Able writers have propounded theories founded on the direct action of insect life as, under certain circumstances, likely to produce disease. * * * * It is quite true that the ova of certain insects may exist for years unhatched; that then, from some peculiar cause, they at once become living things, propagating with a rapidity almost beyond belief. * * * * I have long since arrived at the conclusion, that as the first bricks of the structure of all animals, all vegetation—the cells from which all alike commence—are, so far as Science has ascertained, not only similar in apparent structure, but can be affected in the same way by the same preparation,—that of cochineal used for microscopic investigation,—we have much of our life in common with all life around us. I do not believe there could be an ox-murrain, or pig or sheep disease, extensive sudden destruction of any one crop growing on a large scale, mortality or excessive vitality of any class of insect life, without some causes at work liable to produce disease in man and beast, herb, every creeping and flying thing, directly connected with life on our common soil. * * * * Corrupt animal or vegetable matters beget—I choose that term—vibrionic life, insect life, fungoid life; it is more than probable that this class of living products, or products ready to become alive, partake of the nature of that from which they are bred; it is, to me, quite possible they may require the same atmospheric action to give them active life that caused the death of the beast from which they proceed. * * * * I believe the principles which apply to men, with a certain subordination to the peculiar difference in some portions of the economy of life of animals, hold good. I am incredulous as to new diseases. When I am shown a man or beast of novel construction, I shall expect to hear of new complications in their organism—diseases of derangement of functions as new to us as the functions themselves. In cholera and in malignant typhus, we have morbid action and disorganization in excess —a destructive excess; in a less degree the animal economy shows the same morbid tendency under many other complaints."

Mr. Clark remarked that this theory, that the diseases affecting different classes of animal life were due to the same cause, namely, the atmospheric conditions to which those animals were exposed, seemed not improbable; and it would be interesting to know whether any unusual amount of death or disease, any absence of life, or rather any inferior vitality, in insects had been generally observed during the present season; the almost complete disappearance of wasps seemed to be a case in point.

Mr. J. J. Weir thought the year was remarkable for the abundance of insect life; and even as regarded wasps, he had, both at Tunbridge Wells and in Somersetshire, noticed a considerable (though not a large) number.

Dr. Alexander Wallace said that, as above mentioned, he had lost a number of his Ailanthus silk-worms by disease; it was during a period of three weeks in the wet month of August, when many of the larvæ were observed to delay their last change of skin, to become pale, then livid and sanious, and to fall to the ground; this was coincident with the prevalence of the potato disease. He had planted potatoes between the rows of Ailanthus trees and in some other interspaces, and when the disease first showed itself, the potato-stems were pulled up and laid in heaps: the caterpillars in the vicinity of the decomposing heaps died in greater numbers than those which fed at a greater distance; when fine weather returned the mortality among the worms ceased entirely. With respect to wasps, there had scarcely been a specimen visible at Colchester; plums and other fruit were rotting on the ground, and were consumed by earwigs, bees, &c., but not a single wasp.

The President remarked that swarms of black flies (an Aphis) were commonly regarded in France and Spain as precursors of cholera.

Prof. Westwood observed that, if wasps had been absent, all the common species of domestic flies had been unusually abundant, and so far from exhibiting any depressed vitality, had been excessively active and troublesome.

Papers read.

Mr. F. Walker communicated a paper entitled "Characters of a new Genus and Species of Chalcidites;" the insect in question was from Northern Australia, and bore a striking resemblance to some of the ant-tribe; it was described under the name of Myrmecopsis nigricans.

Mr. M'Lachlan read descriptions of some new British Trichoptera, supplementary to, and intended to be incorporated with, his Monograph of the British Caddis-flies.

Mr. M'Lachlan also read a paper entitled "Descriptions of new or little-known Genera and Species of Exotic Trichoptera; with Observations on certain Species described by Mr. F. Walker." The greater part of the species described were collected by Mr. A. R. Wallace in the Malayan Archipelago; others were from India, Australia and New Zealand. The new species were seventeen in number, the new genera nine.

New Part of 'Transactions.'

Trans. Ent. Soc., Third Series, Vol. ii. Part 5, being the fourth Part published during 1865, was on the table.—*J. W. D.*

Deilephila lineata near Biggleswade.—A fine specimen of Deilephila lineata (or D. Livornica) was caught here on the 10th of September, hovering over geranium and other garden plants.—*J. W. Whitaker; Henlow, Biggleswade, Bedfordshire, October* 17, 1865.

Note on Wasps.—Early in the spring I was much surprised by the number of female wasps that were flying about. On a south wall, among some trained pear, nectarine and apricot trees, I saw as many as seven at one time. From the number of females seen, we naturally supposed that the number of wasps in 1865 would be as great as in 1864, when they swarmed; but, contrary to expectation, I have never seen them so scarce in this neighbourhood. Last year, in our village alone, they destroyed and rendered marketless bushels of plums and apples.—*John Ranson; York.*

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I have managed, by printing eight extra pages and transferring the life-history of Melitæa Artemis to the 'Zoologist,' to bring up all arrears, with the exception of the Reports of the Entomological Society.—*Edward Newman.*

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